

FUCHS Special Applications

STABYLAN

High-Temperature Chain Oils



MOVING YOUR WORLD

LUBRICANTS.
TECHNOLOGY.
PEOPLE.



FUCHS LUBRICANTS GERMANY

We do not just develop lubricants. We develop intelligent solutions for highly complex challenges.

To this end, we have pooled our expertise and experience from a wide range of application areas: FUCHS SCHMIERSTOFFE and FUCHS LUBRITECH became FUCHS LUBRICANTS GERMANY. Our goal: to keep our customers' world in motion. Efficient, sustainable, reliable. Today and tomorrow.

What can we move for you?

FUCHS LUBRICANTS GERMANY

Facts and figures

Company: FUCHS LUBRICANTS GERMANY GmbH,
a company of the FUCHS Group

Locations: Based in Mannheim, with sites in
Bremen, Dohna, Hamburg, Kaiserslautern, Kiel and Wedel;
approx. 1,400 employees

Product range: A full range of more than 3,000 products
for all application areas

Certifications i. a.: ISO 9001, IATF 16949, ISO 14001,
ISO 45001, ISO 50001, ISO 21469, HALAL, KOSHER
(detailed certifications at www.fuchs.com/de/en)

CO₂ neutral production*

Since 1931, we have been pursuing the same goal: to keep the world moving. With innovative and technological lubricant solutions that have a sustainable impact on the future. Unconditional reliability is our top priority, it is the foundation of our company and basis for everything that defines us.

Reliability is both a driver and a demand. And it's a promise to all our customers in the fields of automotive suppliers and OEMs, mechanical engineering, metal processing, mining and exploration, aerospace, energy, construction and transport, agriculture and forestry, as well as the paper, steel, metal, cement, forging and food industries, but also qualified lubricant dealers, car dealerships and workshops.

Long-term experience, high development strength and the fulfillment of far-reaching standards are the basis for the special quality of our world-leading product brands. We deliver solutions that are simply more efficient and therefore more sustainable. We always think in holistic solutions. For the development of individual solutions, we enter into an intensive customer dialog with you. This is the way we live up to our claim of moving your world.

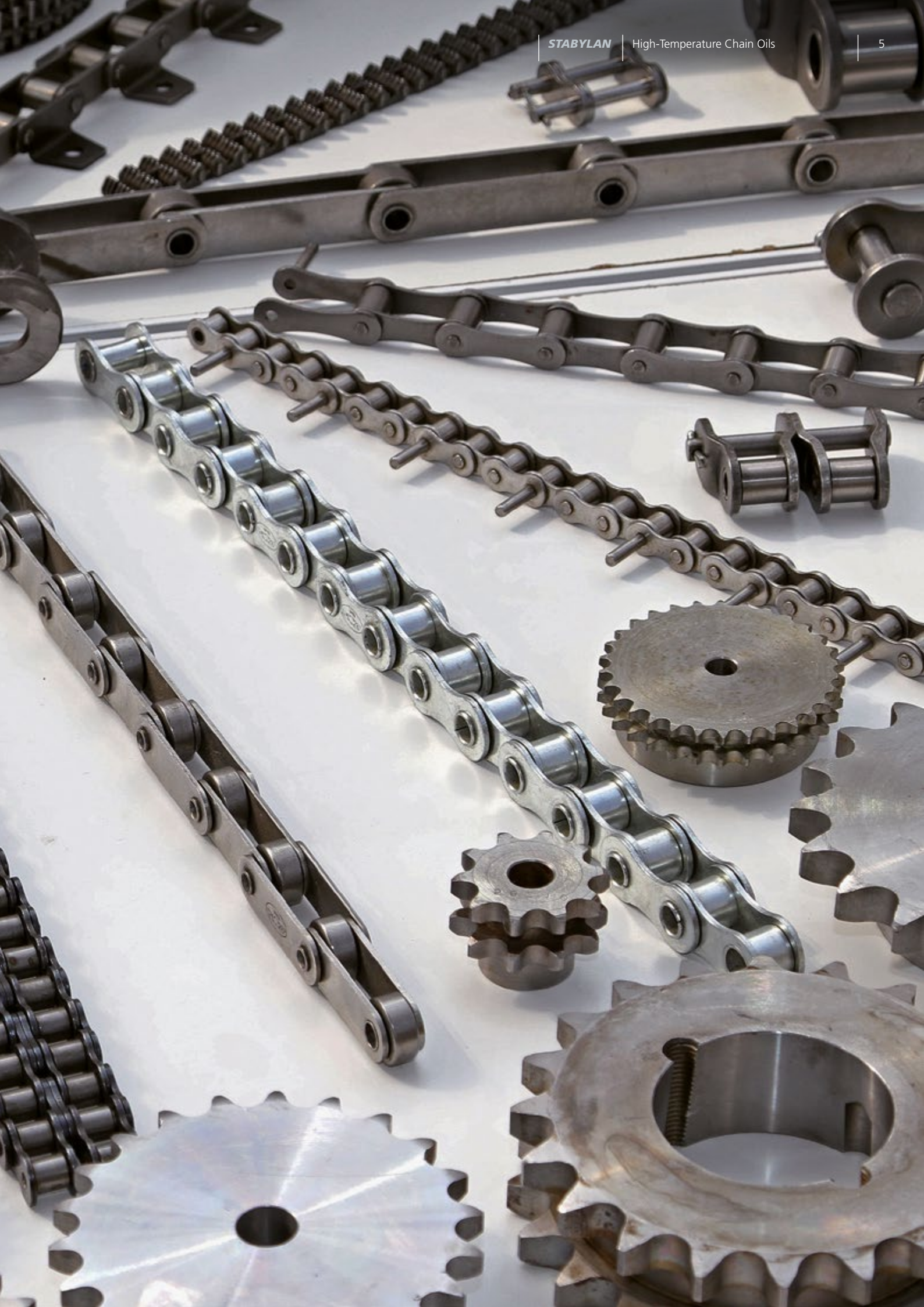
MOVING YOUR WORLD

*Partially also based on compensation

HIGH-TEMPERATURE CHAIN OILS BY FUCHS LUBRICANTS GERMANY FOR THE MOST DEMANDING APPLICATIONS IN INDUSTRY

Where ever chains are used to transport goods under challenging conditions like high temperatures, with dust, dirt or humidity, STABYLAN chain oils are the best choice for lubrication. At FUCHS LUBRICANTS GERMANY we understand the demands and have a portfolio of products designed to meet the requirements of the different industries.

We provide innovative lubricant solutions designed to keep your assets in optimum condition and operating at maximum efficiency. Our own R&D, the production of state-of-the-art lubricants and their global availability pays off. Numerous leading OEMs have approved and referenced our lubricants.



Key applications

Every application has its own challenges. High-quality chain oils are essential for chains running under rough conditions. Our efficient and state-of-the-art STABYLAN range is ideal for such applications. STABYLAN chain oils are successfully used worldwide to lubricate chains in the most demanding high-temperature applications.

Gypsum



In the production of **gypsum boards** long curing ovens are used to remove the water from the boards and harden them. The drying ovens have several chain-driven levels. The chains have to be lubricated with chain oils resistant to the temperatures of the curing oven and simultaneously protecting the chains from corrosion. Oils with high resistance to thermal degradation such as STABYLAN will allow small quantities to be applied and reduce oil dripping and contaminating the gypsum plates. A special high-quality oil will allow the maximum relubrication cycle times and maximize the life of these highly expensive assets.

Mineral wool



Curing ovens in **mineral wool production** (glass or stone wool mats) are operated at high temperatures. The chains driving the conveyor belts have to be lubricated using special high-temperature chain oils. On the one hand these chain oils shall be thermally stable to prevent them from becoming lacquer-like, thus remaining liquid despite the high temperatures; on the other hand, they have to withstand the process conditions prevailing in the oven, e.g. corrosive process air. In this environment STABYLAN products exceed the requirements.

Paint shops



The automotive industry has exacting standards when it comes to quality. In **automotive paint shops** transport chains are used to convey the painted car bodies through curing ovens. This involves particular requirements on the high-temperature chain oils used to lubricate the drive chains. They have to resist the high temperatures of the ovens and must be “paint-friendly” so as not to cause any adverse effect on the paint surface. The high standards of the automotive industry have to be met. STABYLAN oils are silicone-free and designed for this environment being paint-friendly and having a very high resistance to extreme temperatures.

Food



Ovens in **food production** (mainly bakeries and confectionery processing) are often operated at high temperatures. With these high temperatures required, high heat resistance and stability of the lubricant is crucial. Thermal stability is a prerequisite to prevent them from forming solid residues. Nevertheless, they have to withstand the process conditions prevailing in and outside the oven, e.g. flour dust. At the same time, the lubricant has to fulfill highest food safety standards in order to reduce any contamination risk to a minimum. This can be obtained by using chain lubricants which are NSF H1 registered as well as ISO 21469, Halal and Kosher certified.

Product overview

Product name	Description
STABYLAN 5000	<p>Fully synthetic high-temperature chain lubricant</p> <p>STABYLAN 5000 is a fully synthetic oil which is extremely thermally resistant thus not becoming lacquer-like in high-temperature applications. STABYLAN 5000 features high corrosion protection anti-wear properties at high temperatures. Therefore, STABYLAN 5000 supports along chain life.</p>
STABYLAN 5001	<p>Fully synthetic high-temperature chain-lubricant</p> <p>STABYLAN 5001 is a fully synthetic high-temperature chain oil with high corrosion protection properties and outstanding temperature stability. STABYLAN 5001 does not form solid residues at high temperatures, thus allowing a long life of the chains used. Furthermore the friction is reduced by the excellent wear protection, even at elevated temperatures.</p>
STABYLAN 5002	<p>Fully synthetic high-temperature chain lubricant</p> <p>STABYLAN 5002 is a fully synthetic high-temperature chain oil with high corrosion protection properties and outstanding temperature stability. STABYLAN 5002 does not form solid residues at high temperatures, thus allowing a long life of the chains used. Furthermore the friction is reduced by the excellent wear protection, even at elevated temperatures. This lubricant is especially characterized by its excellent adhesion.</p>
STABYLAN 5006	<p>Fully synthetic high-temperature chain lubricant</p> <p>STABYLAN 5006 is a fully synthetic high-temperature chain oil involving a very good corrosion protection and an excellent thermal stability. STABYLAN 5006 provides for a long life of the chains used because of its high compressive strength.</p>
STABYLAN 5020	<p>Fully synthetic high-temperature chain lubricant</p> <p>STABYLAN 5020 is a fully synthetic high-temperature chain oil with high corrosion protection properties and an outstanding temperature stability. STABYLAN 5020 does not form solid residues at elevated temperatures, thus allowing a long life of the chains used. Furthermore an excellent wear protection is guaranteed even at high temperatures.</p>
STABYLAN 6020	<p>Fully synthetic chain lubricant for extreme high temperatures</p> <p>STABYLAN 6020 is a fully synthetic high-temperature chain oil for low consumption lubrication of chains exposed to extreme high temperatures. STABYLAN 6020 ensures an extraordinarily good wear protection at elevated temperatures. The very low evaporation tendency at extreme temperatures results in quantity savings in the two digit percentage range versus conventional high-temperature chain oils. As a consequence smoke and unpleasant odors are reduced accordingly within the direct work environment. The still free-flowing residue of STABYLAN 6020 when used at high temperatures guarantees smooth-running chains.</p>
CASSIDA CHAIN OIL HTE	<p>Synthetic high-temperature chain lubricant for food and beverage processing equipment</p> <p>CASSIDA CHAIN OIL HTE is a synthetic, high-performance ester-based oil which has been specially formulated for the food industry to lubricate drive and transport chains at elevated temperatures. It is based on an advanced blend of synthetic fluids and selected additives chosen for their ability to meet the stringent requirements of the food and beverage industry. Certified by NSF for ISO 21469 and registered by NSF (Class H1) for use where there is potential for incidental food contact. Produced according to FLT Quality Standards, in facilities where HACCP audit and Good Manufacturing Practice have been implemented and form part of the quality and hygiene management systems ISO 9001 and ISO 21469.</p>

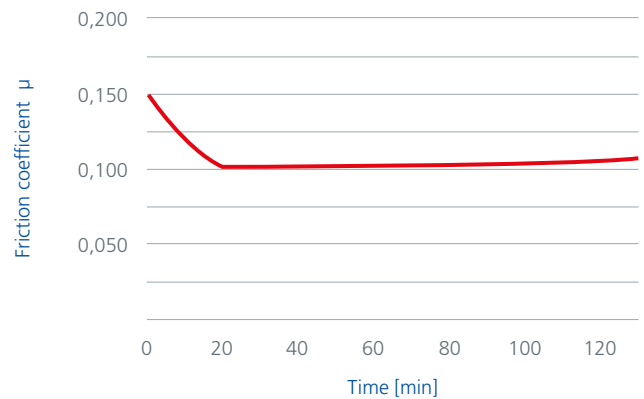
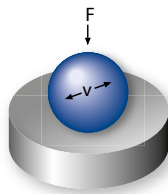
Application area	Characteristics
<p>STABYLAN 5000 is especially suitable for high-temperature applications of all types of conveyor and drive chains in, for example, the chemical and automotive industries, mechanical engineering, wood and plastics processing, packaging equipment, textile industry, gypsum boards or paint shops.</p>	<p>Colour: yellow Temperature range: -20°/+240° C Base oil: synthetic Viscosity at 40° C: 100 mm²/s Viscosity Index: 110 Flashpoint: 260° C Pourpoint: -30° C</p>
<p>STABYLAN 5001 is especially suitable for high-temperature applications of all types of conveyor and drive chains in, for example, the chemical and automotive industries, mechanical engineering, wood and plastics processing, packaging equipment, textile industry, gypsum boards or paint shops.</p>	<p>Colour: yellow Temperature range: -15°/+240° C Base oil: synthetic Viscosity at 40° C: 180 mm²/s Viscosity Index: 91 Flashpoint: 260° C Pourpoint: -20° C</p>
<p>STABYLAN 5002 is especially suitable for high-temperature applications of all types of conveyor and drive chains in, for example, the chemical and automotive industries, mechanical engineering, wood and plastics processing, packaging equipment or textile industry.</p>	<p>Colour: yellow Temperature range: -15°/+220° C Base oil: synthetic Viscosity at 40° C: 412 mm²/s Viscosity Index: 96 Flashpoint: 255° C Pourpoint: -18° C</p>
<p>STABYLAN 5006 is suitable for all types of drive and conveyor chains, sliding surfaces, and eccentrics, for example in the chemical and automotive industry, in engineering, in steel hydraulics construction, in wood and plastics processing, in the packaging and textile industry. STABYLAN 5006 is also used wherever the chain is exposed to salt or splash water.</p>	<p>Colour: yellow Temperature range: 0°/+240° C Base oil: synthetic Viscosity at 40° C: 3000 mm²/s Viscosity Index: 132 Flashpoint: 260° C Pourpoint: -7° C</p>
<p>STABYLAN 5020 is suitable for high-temperature applications of all types of conveyor and drive chains. STABYLAN 5020 was especially developed for the lubrication of roller chains in curing ovens in the production of insulating material, gypsum boards or paint shops.</p>	<p>Colour: yellow Temperature range: -20°/+250° C Base oil: synthetic Viscosity at 40° C: 220 mm²/s Viscosity Index: 107 Flashpoint: 250° C Pourpoint: -42° C</p>
<p>STABYLAN 6020 was especially developed for low-consumption lubrication of chains in curing ovens of insulating material production plants. STABYLAN 6020 can also be used for any steel-sprocket chains especially in the high-temperature range, e.g. in ovens and dryers of the metal, wood, paper, and construction material industries as well as for clamping, drying and fastening machines in the textile industry. In the production of gypsum boards, mineral wool as well as in paint shops.</p>	<p>Colour: reddish Temperature range: -20°/+260° C Base oil: synthetic Viscosity at 40° C: 130 mm²/s Viscosity Index: 105 Flashpoint: 290° C Pourpoint: -39° C</p>
<p>Drive and transport chains in the food industry. Also intended for use in equipment for manufacturing food packaging.</p>	<p>Colour: yellowish Temperature range: -25°/+240° C Base oil: synthetic Viscosity at 40° C: 230 mm²/s Viscosity Index: 106 Flashpoint: >250° C Pourpoint: <-30° C</p>

Test methods for high-temperature chain oils

STABYLAN chain oils must pass several test methods to prove their ability for high-temperature applications. Real operating conditions are simulated in order to ensure that the chain oils can withstand the high requirements of the different areas of use.

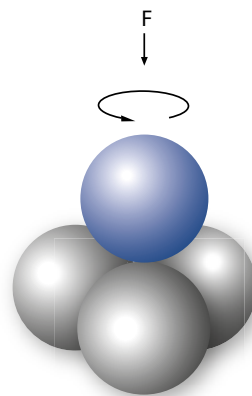
Linear-oscillation test machine

- DIN 51834-8, ASTM 5706 and 5707
- Oscillating test body on plate (lubricated)
- Contact geometry: punctiform (alternatively flat surface or linear)
- Test criteria: coefficient of friction, wear
- Test at high sliding speeds and variable surface pressures, temperatures, amplitudes and frequencies



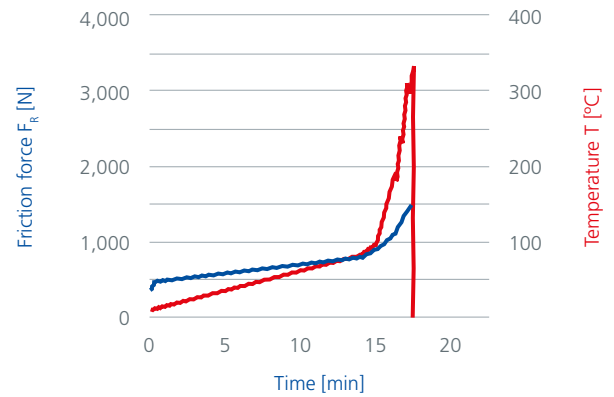
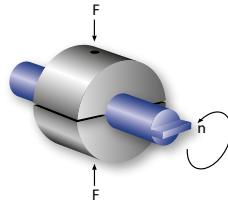
Four-Ball test method

- DIN 51350 (1-5)
- Rotating ball on three fixed balls
- Contact geometry: punctiform
- Test criteria: four-ball welding load, wear
- Gradual increase in test force until the balls are welded
- Constant test force for a specified period (1h or 1min), measurement of wear calotte



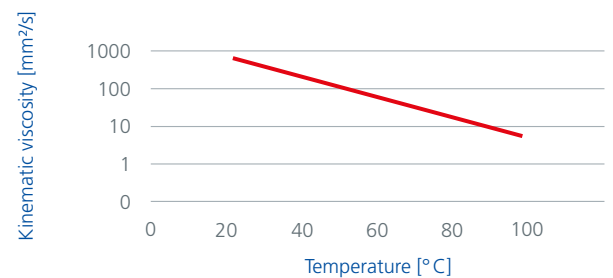
Almen-Wieland test method

- FUCHS specification
- Rotating shaft (lubricated) fixed in two bearing shells
- Contact geometry: linear
- Test criteria: seizing load, coefficient of friction
- Measurement with low sliding speeds and high surface pressure



Ubbelohde viscometer

- DIN 51562-1
- Capillary-based method of measuring viscosity
- Test criteria: kinematic viscosity



Evaporation loss and residue formation

- FUCHS LUBRICANTS GERMANY in-house test
- Testing of evaporation behavior and stability of high-temperature oils
- Test criteria: weight loss, condition of residues



Innovative lubricants need Experienced application engineers

Every lubricant change should be preceded by expert consultation on the application in question. Only then the best lubricant system can be selected. Experienced FUCHS engineers will be glad to advise on products for the application in question and also on our full range of lubricants.



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